Primary Care Case Study 0883

A Working Model of Pre-Paid Health Care: The Polyclinic of Family Medicine in Dnieprodzerzhinsk, Ukraine

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1.0 EXECUTIVE SUMMARY

The Polyclinic of Family Medicine (PFM) in Dnieprodzerzhinsk, Ukraine, was founded in September 1989 by Dr. Alexander V. Mostipan as a private practice without state funding. The clinic provided primary care, "family medicine," under its own insurance plan: in exchange for a flat monthly premium payment, the clinic provided ambulatory care, home care, medicines, and a physician available at all times. Over time, the PFM has adapted to client requests for partial state funding and a system of fees. Building on the fundamental principle of service to the patient, today the clinic has over 11,000 members. The quality of care and health of the membership is better than average, yet the per capita cost of all of their health care is less than half of the city and oblast averages. This success is achieved though giving responsibility for most of a patient's care to a single family physician. The result is good quality care with far less use of diagnostic testing, specialist care, and hospital care. The PFM experience proves that a model of increased primary care and reduced specialty and hospital care is achievable in Ukraine. Implications of expansion of the PFM and widespread use of the PFM model are discussed.

2.0 INTRODUCTION

The Polyclinic of Family Medicine (PFM) in Dnieprodzerzhinsk, Dniepropetrovsk Oblast, Ukraine was founded in September 1989 by Dr. Alexander Mostipan. Dr. Mostipan had previously worked as chief physician and administrator of the health system of a large industrial plant. He left his position because he felt could not address what he thought was the primary problem of Soviet medicine: the system's unresponsiveness to the needs and interests of patients, which he attributed to the lack of connection between the financing of health care, on the one hand, and the flow of patients and their satisfaction, on the other. He also believed that health care workers needed incentives to "work harder and better." In its history, the PFM has experimented with most of the major innovations proposed to reform the health care system of Ukraine. The purpose of this paper is to describe the largely successful experience of the PFM with these reforms.

2.1 Health Care in Dnieprodzerzhinsk

Dnieprodzerzhinsk is a medium-sized, heavily industrialized city that straddles the Dnieper river near the easternmost point of its course in east-central Ukraine. All of the industry and two-thirds of the population reside on the southern or "right" bank while the northern or "left" bank is entirely residential. The distribution of medical facilities other than the PFM is rather unbalanced: the left bank has only one polyclinic and one ambulance sub-station. The right bank has all the hospitals, six polyclinics and six industrial medical units. The main indicators that describe the city's health care system and its utilization are similar to indicators for the rest of Ukraine. There are 24.5 hospitalizations per 100 people per year, 4.1 hospital bed-days per capita per year, and 136.4 hospital beds per 10,000 population, while the average length of a hospital stay is 16.3 days; all of these figures are very close to the national average. There are also 11.5 outpatient visits per year and 44.4 physicians per 10,000 population; these figures are about 10 percent greater than the national average.

2.2 History of the Polyclinic of Family Medicine

Dr. Mostipan understood he would not be able to persuade many individuals to purchase their own medical coverage; and while the idea of payment for better services was not new, the idea of *pre*-payment was quite novel. Enterprises, on the other hand, were accustomed to financing medical and recreational facilities for their workers. Most large enterprises already had their own medical facilities, although these often served only the workers and not their families. Dr. Mostipan decided he could persuade enterprises that were too small to have their own medical facilities to sign contracts with him to provide care for their workers and the worker's families. Working with small firms also had the advantage of making it easier for the firm managers to judge the worker's satisfaction with their family's medical care. He was able to enlist 25 firms with 5000 workers and dependents. He petitioned the City Health Administration for permission to operate independent "polyclinics for family medicine." On September 26, 1989, the City Health Administration ordered the creation of an "Experimental Self-financed Family Medicine Polyclinic" and contributed a single telephone line.

In January, 1990, enrollment reached 10,000. The program was simple: in exchange for a flat monthly fee (eight rubles per month), the clinic provided ambulatory care, home care, medicines, and a physician available at all times. Because Dr. Mostipan believed that much of the care given in hospitals could just as well be provided at a clinic or at home, the program effectively included a great deal of care that was typically provided in the hospital, but which he determined could be provided on an out-patient basis.

Initially, the only physicians were Dr. Mostipan and his brother. Their only facility was a single rented room; most care was provided at the patient's home or place of work. By the end of 1990, the PFM staff had expanded to eight physicians, and for each physician a car and nurse was assigned. They also succeeded in obtaining from the city a kindergarten building that had been closed in disrepair. After extensive remodeling and repairs done at the expense of the PFM, the building became its principal clinic.

By October 1992, the PFM had enrolled 15,000 members and had 80 employees including 25 physicians. Because enterprises objected to paying the full cost of PFM services as they pay taxes for publicly funded services, attempts were made to obtain government funding. Reforms in the health care budgeting process in mid-1992 allowed the oblast government to pay PFM a fixed amount for each enrolled member (1500 karbovantsev per person per year). This occurred near the beginning of the period of very high inflation. At the initiation of government funding in October 1992, the government payments represented 80 percent of revenue because enterprise premiums had been eroded by inflation. Subsequently the ratio of revenue coming from the government to enterprise contributions has fluctuated wildly. With the continuing economic crisis in Ukraine, the number and size of economically viable enterprises has diminished and enrollment has declined to its current level of about 11,000.

2.3 Organization

Today, the PFM has 27 physicians and a total of 63 employees. There are nine primary care physicians (five internists and four pediatricians) and 18 specialists (including five dentists, a surgeon, an obstetrician-gynecologist, an otolaryngologist, a neurologist, a cardiologist, an ophthalmologist, a psychiatrist, a dermatologist, an endocrinologist, and a urologist). They are distributed among the principal clinic, located near the center of the city, and two satellite offices located in left bank residential areas. Each office has examination and consultation rooms, a procedure room for electrocardiograms, and a dentist's surgery. Five industrial enterprises subscribing to the PFM are provided dispensaries which PFM staffs with occupational health nurses.

The primary care physicians are assigned to one of five geographical districts, two on the left bank and three on the right. The two left bank offices each staff one district while the three right bank districts are based in the principal polyclinic building. Each district team consists of one internist, one pediatrician and two nurses, all of whom live in the district. The specialists divide their time among the offices. Except for dentists, specialists will usually see patients only on a request for consultation from a primary care doctor. All PFM facilities are open until 8 p.m. on weekdays. On weekends and holidays, primary care doctors are on duty until 6 p.m., specialists are available until 2 p.m. There is no longer night coverage; physicians demanded too much money to supply this service.

Home visits continue to be an important part of the service. Physicians frequently make home visits and most are provided with a radio-equipped car for this purpose, as well as for personal use. Patients call the PFM central number where a dispatcher, who also registers patients visiting the main clinic, verifies the patient's eligibility and contacts the physician by telephone or radio.

Supporting the practice are several other departments. The most clinically-oriented are the clinical laboratory and the dental prosthetics laboratory. Two engineers repair and maintain medical equipment. The accounting department programs and maintains a computer database connected to a local area network that collects registration and billing information entered by nurses and clerical personnel. (The satellite clinics have personal computers but these are not connected to the network.) The transportation department provides drivers and maintains vehicles. A most remarkable innovation for a medical institution in Ukraine is the narketing department, staffed by three people. The department has been given four responsibilities: 1) identifying and analyzing prospective customers, both individuals and firms, 2) reaching those prospective clients through advertising and direct contact, 3) conducting surveys of existing clients to judge their satisfaction with care and interest in various services, and 4) collecting past-due accounts.

3.0 GOALS AND PRINCIPLES OF THE PFM

When he founded the Polyclinic of Family Medicine, Dr. Mostipan established a number of principles:

- A client will never be left with a complaint. This principle was quite rare in the Ukraine of 1989 and is similar to the customer orientation and "zero defect" continuous quality improvement philosophies of the most progressive Western companies.

- Continuous operation. This philosophy was followed the first year of the PFM's existence but could not be sustained. PFM physicians are no longer available at night. However, given the lack of an economic incentive—when the PFM is closed, patients can call on the city's emergency health system at no cost to the PFM—the availability of PFM services for 80 hours a week is still a substantial achievement.

- Commitment to truth: no false information on medical certificates or medical records or revision of records after the fact. Personnel, including physicians, have been discharged for violating this principle.

- Maximum convenience for the patient. Again, a truly extraordinary commitment to service. The large number of home visits, well in excess of medical necessity, reflects this commitment to service.

- Family doctors and nurses reside in the same district as the clients they serve. Not only does this facilitate greater familiarity with a patient's situation, it promotes identification with clients and the idea that their primary commitment is to the patient, even before the PFM. Dr. Mostipan reinforces this point by insisting that everyone at the PFM works for the family doctors.

- Medical practice must be based on science. Non-scientific methods such as bioenergy, homeopathy, ESP, astrology, etc. are discouraged.

- Constant striving to incorporate new technology and expand the range of services provided. This again reflects a philosophy of continuous quality improvement. Given the severe financial constraints created by the long and continuous economic crisis in Ukraine, fidelity to this principle has been remarkable.

- Performance-based pay. This is a reaction to the disincentives of the old, centrally-planned health system where rates of pay were fixed by the Ministry. The PFM pay system relates pay directly to revenue generated as well as the volume and quality of the work performed.

- Social protection of workers. Difficult to maintain in these extreme financial circumstances.

3.1 Financial Structure

Since the founding of the PFM, clients have requested changes in financing from the original pure capitated rate. Enterprises wanted to "be sure they were getting something for their money" so they are now billed a reduced fee-for-service in exchange for a lowered capitation rate. The capitation rate is adjusted according to the size of the firm and length of time as a client; these factors reflect both reductions in administrative costs and risk. Presently, government funding is

limited to the salaries and payroll taxes of PFM physicians (except dentists) at rates similar to publicly employed physicians. The plan charges patients 20 percent copayments for cosmetic, contraception, abortion, and dental services as well as for eyeglasses and contact lenses. Full rates for fee-for-service are charged to patients who are not enrolled in the plan.

Financial Statement for 1995 (figures as percent of total expenditures):

State funding	54.2%
Salaries	39.4%
Payroll taxes for salaries	14.8%
Charges to clients	83.3% (plus 20% VAT)
Premiums	41.7%
Fees charged to enterprises	27.8%
Copayments	4.6%
Fees charged non-members	9.2%
Revenues collected from clients	64.4% (plus 20% VAT)
Funds from enterprises	36.6%
Cash from patients	17.6%
Barter	10.2%
Bad debt	(19.0%)
Expenditures	
Physician salaries	39.4%
Other salaries	11.1%
Payment in goods	14.4%
Capital expenditures	10.2%
Transport	11.6% (gasoline and vehicle maintenance)
Supplies and Materials	13.4%

There is an excess of revenue over expenditure (18.8 percent) due to differences in accounting. A large portion of fee-for-service income, while listed above as revenue, is given directly to the doctors and nurses performing the services; it is not listed as expenditure. The doctors and nurses individually negotiate among themselves an agreeable split of the fee income.

3.2 Capital Funding

Other than buildings, which were received from municipal authorities in poor repair in exchange for nominal rent, all equipment expenditures are funded out of income. This practice has been encouraged by the inflationary environment; any large receipt of funds was converted into capital equipment before it could its value became eroded. Depreciation of equipment is not considered in the financial statement and there is no debt financing.

4.0 THE MEANING OF "FAMILY MEDICINE"

The concept of "Family Medicine" as practiced at the PFM is close to American concepts of primary care. Each PFM member can identify a single physician who has principal responsibility for that person's care. Under the present system generally in use in Ukraine, it could be more readily said that an entire polyclinic shared this responsibility. It is not simply that patients begin each episode of care with the same physician; the PFM physician also provides a much greater proportion of that care. The present system also has district internists and pediatricians who may act as the first point of contact with a patient, but they are much more likely to refer the patient to a specialist rather than treat the problem themselves. One basic principle of family medicine, therefore, is for the primary care doctor to do a greater proportion of the work for a smaller number of patients.

There are several benefits to the family medicine approach. From a physician's standpoint, a physician who is familiar with a patient's life circumstances and all of a patient's health problems, as well as those of his family, can make better diagnoses. The physician can also be more efficient because he has less need to repeat examinations and tests. While it is sometimes advantageous to have the skills and knowledge of a specialist, they are more often unnecessary. A good primary care physician should be able to make good judgments about when a specialist is necessary. A patient will often prefer to be cared for by a single physician; patients fear being lost among many physicians and need to know someone is responsible for them. The confidence gained may outweigh that gained by seeing a specialist.

In Dr. Mostipan's opinion, family medicine should ideally mean that each *family* could identify a single physician who is responsible for them. This is the philosophy of the specialty of family practice in the United States and Canada. Future training of family doctors should include the treatment of both adults and children.

5.0 QUALITY OF CARE

Over the last 15 years in the United States it has become increasingly clear that, for most patients, large amounts of hospital and specialist care do not improve the quality of care; they do little more to improve the patient's health than what can be done by a good family doctor. This is not because the skills and equipment of specialists are poor; they are simply not needed. The experience of the PFM demonstrates that this is also true in Ukraine.

Despite using far less hospital and specialist care, the health of PFM patients is as good or better than the general population of Dnieprodzerzhinsk. The death rate for PFM patients is less than half that reported for the city or for Dniepropetrovsk Oblast. Even when the difference in age distribution is corrected, the PFM treats many fewer elderly women, the death rate for the PFM is almost 30 percent lower than the general rate. The birth rate is 50 percent higher among PFM members than the city average; over 15 percent higher when an adjustment for the higher proportion of women of child-bearing age among PFM members is made. Other figures indicating better quality of care at the PFM are the higher proportion of physicians with certification and higher rates of prenatal screening.

Because there is no reason to believe that treatment by the PFM produces inferior health outcomes, the issue of quality of care rests on the patients' satisfaction with their care. The PFM places great importance on patient satisfaction. Perhaps the most accurate and important indicator of the quality of care provided by the PFM is the willingness of most of its clients to continue to pay for its services despite a severe economic crisis.

5.1 Efficiency of Care

The greater expenditure on primary care by the PFM has led to far greater savings overall. The PFM reports that a rate of hospitalization for its members which is 28 percent of the average rate for the city of Dnieprodzerzhinsk and the rate of emergency ambulance use is one-third of the city average (which is already much lower than the oblast average). This reduction in specialist, emergency, and hospital care is substantial. Compared to the averages for Dniepropetrovsk Oblast, PFM members use nearly twice as much primary care doctor time but one-third less physician time overall (see Table 1).

The reduction in hospital care is almost entirely due to a reduction in non-surgical hospital admissions. Rates of surgery for PFM patients are similar to the general population. The reduction in non-surgical hospital admissions occurs for two reasons. First, because PFM members have family physicians whom they can readily identify and contact, there are many fewer ambulance calls. Ambulance calls usually result in the admission of the patient to the hospital, even when the patient is not severely ill. Second, PFM physicians do not admit patients to the hospital if the necessary tests and treatments can be given at a clinic or at home.

In terms of outpatient care for both primary care and specialists, there is 25 percent less physician time but the number of clinic visits is reduced by 75 percent. The average number of home visits is the same, but the relative use of home visits is much greater and, when adjusted for the younger age of PFM patients, there is a greater tendency to use home visits by the PFM. The average doctor visit is 125 percent longer than the average for the rest of the city. This is in part because 25 percent of the visits made by PFM physicians are home visits, which take three times longer than office visits but the regular office visits themselves are 50 percent longer than the oblast average. PFM physicians also do much less testing. This suggests that allowing physicians to spend longer visits with patients permits problems to be resolved with fewer follow-up visits and less testing.

Savings in monetary terms are even more substantial. Current national averages for relative expenditure on primary care, other outpatient care, and hospital care are 5 percent, 15 percent, and 80 percent, respectively. For PFM members, expenditures on primary care are 80 percent greater than the national average; but spending on other outpatient care is nearly fifty percent lower than the national average, and spending on hospital care is 72 percent lower. As a result, *total* per capita expenditures for PFM members is 60 percent lower than the national average (see Table 2). Even adjusting for the relatively younger population served by the PFM, average spending is still 53 percent less. Given that the city health administration provides less than half of the revenue of the PFM, it receives savings from the PFM that are worth more than ten times the money it provides.

Table 1 Physician Distribution

Physicians per 10,000 population	Dniepropetrovsk Oblast	PFM
District Internists	2.47	4.49
District Pediatricians	1.84	3.59
Dentists and Stomatologists	5.12	4.49
Emergency Physicians	1.29	0.27
Hospital-based Physicians	6.75	1.92
Other Specialists	22.47	11.67
Total	**39.93**	**26.44**

Table 2 Spending Allocation

Relative Expenditure on	Dniepropetrovsk Oblast	PFM	Reallocated Budget
Primary Care	0.05	0.09	0.20
Outpatient Specialty Care	0.15	0.08	0.16
Hospital Care	0.80	0.23	0.64
Total	**1.00**	**0.40**	**1.00**
Age and Sex Adjusted Total	1.00	0.47	1.00

6.0 THE PFM AS A MEDICAL INSURANCE PROGRAM

The PFM began as a medical insurance program: in exchange for a monthly premium, it provided certain medical services as needed. This arrangement has changed over time as partial state funding was provided and fees were charged. The success of the PFM under a variety of financial arrangements indicates that the source of funding is less important than the freedom the PFM has had in deciding how to spend its resources. Because fees are tied to the services provided, it would be difficult for the PFM to operate as it does if the majority of its income came from fees. The restriction of state funding to physicians' salaries also restricts the PFM's freedom. The PFM has had the flexibility to be innovative and efficient only because a large portion of its income comes from premium payments which have no restriction on their use. If state funding, either from the state budget or a state medical insurance fund, were to replace premium payments by enterprises, the funding should be made on a per capita basis without

restriction on how the money should be spent. Fees should be limited to those services for which patients are charged.

6.1 Opportunities for Increased Cost Savings

While the hospitalization and emergency ambulance use rates of PFM patients are low, they can be lowered even more. The PFM has achieved these very low rates of hospital and ambulance use without having any economic incentive to reduce these levels of care. The incentive has actually been in the opposite direction: it costs the PFM nothing to have a patient treated in the hospital or for a patient to use the emergency ambulance service and it saves the PFM substantial time and money. The availability of the city emergency ambulance service is the major reason why the PFM does not have physicians available at night; the money it would cost is better spent on other needs.

If the PFM had physicians available at night, the number of hospital admissions would be further reduced. Most patients treated by the emergency service are admitted to the hospital. Treatment by PFM physicians would probably avoid hospitalization in a large number of cases. To accomplish this, however, there must be a financial incentive. For example, the PFM could be given a portion of the money saved, as a result of reduced ambulance use and fewer hospitalizations, which it would use to pay its physicians for night duty.

Another reason for overuse of hospital care, which the PFM cannot currently influence, is excessively long length of stay. The average length of hospitalization in Ukraine is two to four times longer than it is in the West. After initial treatment, the patient is often stable enough to be treated at home or in the clinic, but hospital physicians generally prefer to keep the patient in the hospital until treatment is completed. PFM physicians are skilled at giving care outside of the hospital; they could take patients out of the hospital much earlier *if* there were an incentive for them to do so. It is also likely that PFM physicians would send to the hospital fewer of the patients they currently hospitalize if the incentives were different.

The PFM could also work to reduce the cost of surgical hospitalizations. Many more operations can be performed on an ambulatory basis without hospitalization. Some surgery is unnecessary and could be replaced by medical treatment. The PFM could work at reducing the length of hospital stay for surgery by doing routine post-operative care outside the hospital when the patient's condition has stabilized.

What incentives are necessary for the PFM to further improve the efficiency of care? There are two possible approaches. The PFM would provide its own emergency services and either (1) take over the operation of one or more hospitals and provide in-patient care directly, or (2) pay one or more hospitals to provide care to its members, based on negotiated agreements or contracts. Either of these approaches would require the city to pay the PFM for each PFM subscriber, the same, all-inclusive amount that the city would expect to pay for all of the health care required by the average citizen who was not a PFM member. The PFM would then become responsible for covering the total cost of its members' care.

1. If the PFM took over hospital facilities, municipal funding paid to the PFM should be based on the size of the covered population, not on beds or ambulance services actually used. PFM would then either take over a smaller number of beds than expected or reduce the number of beds in use. The PFM would then be allowed to use the money saved to pay for additional medications, supplies, equipment, and services as well as better salaries (especially for physicians doing night duty). There should be no restrictions on where these additional resources can be used (home, clinic, or hospital).

2. If the PFM contracted for hospital care, there are two possible approaches to payment: a) per case, or b) per hospital day. Payment per hospital day probably is superior for several reasons. If the PFM paid the hospital a fixed amount for each case, regardless of how long the patient stayed in the hospital, the PFM would have no incentive to discharge the patient and to treat him at home or in the clinic; the hospital, on the other hand, would have an incentive to discharge the patient as soon as possible, perhaps prematurely. In the case of payment per hospital day, the PFM would have an incentive to discharge patients from the hospital, but probably *not* prematurely, insofar as the patient might have to return, thereby increasing the PFM's costs; now, however, the hospital would have an incentive to keep the patient longer. Because the PFM has the expertise needed to treat patients outside the hospital, the incentives of per-day payment would be a more natural adjustment. Payment per day also would be easier to calculate and administer. Because patients may differ substantially in their conditions and severity of illness, per-case payments would have to be adjusted in order to capture and reflect these differences. There would be less of a need for such adjustments in the case of per-day payments, since most of the differences between patients, in terms of their condition and severity of illness, are reflected in the length of their stay in the hospital.

Dr. Mostipan has proposed an expansion of the PFM that combines aspects of operating their own hospital and contracting with others. He has proposed that a hospital in Dnieprodzerzhinsk, currently funded by a national Ministry, be turned over to the city in order to be operated by the PFM. A single fund, based on per capita allocation of the city health budget, would be created to finance the care of the population covered by this hospital and the other PFM members. The PFM would directly provide all care (including ambulance service) other than surgical hospitalizations, specialized diagnostic tests, and unusual specialty care. The fund would pay other providers for these services. The district doctor must approve payment for all services except those where the patient makes a 20 percent copayment. This proposal also suggests making the expanded PFM and hospital the center of a school of family medicine.

7.0 CONCLUSION: THE BENEFITS OF UNIVERSAL COVERAGE

At present, the PFM program serves only relatively prosperous persons, i.e. those employed by enterprises in sufficiently strong financial condition to be able to afford a supplementary health care program. This does not mean, however, that the general population cannot also be supported by a decentralized program, modeled on PFM's experience and financed on a capitated basis.

Indeed, the experience of PFM demonstrates the extreme inefficiency of the current health care system both in Dniepropetrovsk oblast and in the rest of Ukraine. If this system were reorganized according to the PFM "model," the same or an even greater amount of care might be provided at half or less the total current cost of providing that care. If the PFM model were implemented throughout Dniepropetrovsk oblast and if all of the savings achieved were re-invested in the health care system—that is, if total budgetary expenditures on health care in the oblast remained the same—then the oblast health care budget might resemble the figures presented in the third column of Table 2:

- Because of the increased utilization of primary care physicians, the total number of district internists and pediatricians would double, and funding per district physician also would double. As a result, total funding for primary care would increase by 300 percent.

- Because of a decline in referrals to specialists, the total number of non-hospital specialists would be reduced by 50 percent. However, thanks to total cost savings, funding for each remaining specialist could increase by as much as 120 percent, in which case total expenditures on non-hospital specialists would actually rise by 10 percent.

- Because of a decline in ambulance calls and the rate of hospitalization, the total number of hospital beds would be reduced by 60 percent. Still, thanks to total cost savings, funding for each remaining hospital bed could increase by 100 percent, in which case total expenditures on hospital care would decrease by only 20 percent.

These figures are meant only to be illustrative—other combinations are possible—but they do underscore the potential benefits that could be realized from a radical restructuring of the health care system based on the PFM model. That model is based, in turn, on the principles of *family medicine* and on *financial incentives* for physicians and other health care providers to provide the highest quality of care in the most cost-effective manner possible. There is no obvious reason why the same clinical and economic benefits could not be realized throughout Ukraine, if such reforms were instituted on the national level.

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Annex

Selected Statistical Comparisons of Dniepropetrovsk Oblast, Dnieprodzerzhinsk City, and the Polyclinic of Family Medicine

Category	Dniepropetrovsk Oblast	Dnieprodzerzhinsk City	Polyclinic of Family Medicine
Population	3,880,000	290,000	11,135
Male	46.2%		52.6%
Female	53.8%		47.4%
Age			
0-14	21.2%		15.5%
15-49	48.4%		65.5%
50-59	13.3%		12.8%
60-64	6.4%		2.9%
65-69	3.3%		2.0%
70 and Over	7.4%		1.3%
Male			
0-14	23.4%		15.8%
15-49	50.7%		63.6%
50-59	13.5%		13.5%
60-64	5.7%		3.5%
65-69	2.4%		2.4%
70 and Over	4.3%		1.3%
Female			
0-14	19.4%		15.2%
15-49	46.3%		67.6%
50-59	13.1%		12.0%
60-64	7.1%		2.3%
65-69	4.1%		1.7%
70 and Over	10.0%		1.3%
Births per 1000	8.6	7.6	11.3
Age and Sex Adjusted Births per 1000	8.6	7.6	8.8
Deaths per 1000	15.8	16.1	6.5
Age and Sex Adjusted Deaths per 1000	15.8	16.1	11.6
Infant Mortality (< 1year) per 1000 births	14.6	17.9	0
Daily Ambulatory Visit Capacity per 10,000 pop.	216	220	108
Working Physicians per 10,000 pop.	42.5	44.4	24.2
Physician Extenders (Feldshers) per 10,000 pop.	106.5	117.1	0

Percent of Physicians with Certification	51.7%	52.6%	92.6%
in two highest categories	36.2%	35.6%	51.9%
Percent of Internists with Certification	46.2%	65.6%	100.0%
in two highest categories	27.9%	39.9%	80.0%
Percent of Pediatricians with Certification	49.5%	56.4%	100.0%
in two highest categories	30.3%	38.2%	50.0%
Percent of Other Physicians with Certification	52.8%	49.5%	88.9%
in two highest categories	34.0%	34.4%	44.4%
Ambulatory Visits per person per year	10.1	11.5	3.0
Home Visits per person per year	0.8	1.0	1.0
Ambulance Calls per 1000 pop.	350.7	220.4	72.8
Hospitalizations per 100 pop.	23.9	24.5	6.90
Hospital Beds	52,459	3,970	
per 10,000 pop.	134.9	136.4	
Occupancy Rate	82.3%	82.3%	
Average Length of Stay	16.8	16.3	16.2
Operations per 10,000 pop.	577.0	625.5	544.2
Pregnancies with prenatal visits in the first trimester	81.4%	82.3%	93.9%
Pregnancies			
with syphilis testing	90.2%	87.6%	100.0%
with ultrasound exam	79.9%	84.1%	100.0%
Radiologic procedures per 10,000 population	4317	3583	645
Ultrasound procedures per 10,000 population	2144	1273	178
Endoscopic Procedures per 10,000 population	450	344	137
Laboratory procedures per 100 clinic visits	88.5	77.8	39.8
Laboratory procedures per 100 clinic, home and dental visits	48.7	50.7	26.5